

## **REMARKS**

Claims 5, 6, 12, 14-16, 18-20, 58 and 61-63 are presently pending in the case. Claims 12 and 58 have been amended. The amendments are supported by the specification and claims as originally filed.

Reconsideration of the present case in view of the above amendments and the remarks herein is requested.

### **Claim rejections under 35 USC §112**

The Examiner rejected claims 58 and 61-63 under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner's objection to the language in claim 58 is believed to be overcome by the above amendments.

### **Allegedly insufficient declarations**

Applicant acknowledges with disagreement the Examiner contention that the 37 C.F.R. 1.132 declarations submitted by Applicant on 20 December 2006 are insufficient to overcome the 35 U.S.C. §102(e) rejections based on U.S. Patent Application 2004/0055709 to Boyd et al. Applicant reserves the right to traverse the Examiner's conclusions and/or to provide additional evidence in support of the declarations. However, the issue is believed to be moot in view of the amendments and remarks made herein.

### **Claim rejections under 35 USC §102**

The Examiner rejected claims 12, 14, 17 and 19 under 35 USC §102(e) as being anticipated by U.S. Patent Application 2004/0055709 to Boyd et al (hereinafter Boyd et al). The rejection is traversed.

Boyd et al does not anticipate independent claim 12, for example. For a rejection under 35 USC §102 to be proper, the reference relied upon must disclose each and every element of the claimed invention. Non-disclosure of a single element, feature or limitation of the claim negates anticipation. Claim 12 is to a substrate support comprising, *inter alia*, a plurality of mesas comprising a coating of a diamond-like carbon material over a titanium-containing adhesion layer. Boyd et al does not disclose a plurality of mesas over a titanium-containing adhesion layer. As can be seen in Figure 3C of Boyd et al, the mesas (202) are part of the body (102) of the chuck. Since Boyd et al does not disclose each and every feature set forth in claim 12, it does not anticipate the claim. Thus, the Examiner is respectfully requested to reconsider the language of claim 12 and withdraw the rejection thereof under 25 USC §102(e).

Applicant requests withdrawal of the rejection of claim 12 under 35 U.S.C. §102(e). In addition, Applicant requests withdrawal of the rejection of claims 14, 17 and 19 which depend from claim 12 and are not anticipated by Boyd et al for at least the same reasons as claim 12.

#### **Claim rejections under 35 USC §103(a)**

The Examiner rejected claims 12, 14, 15, 19 and 58 under 35 USC §103(a) as being unpatentable over U.S. Patent 5,583,736 to Anderson et al (hereinafter Anderson et al) in view of U.S. Patent 5,969,934 to Larsen (hereinafter Larsen) and U.S. Patent 7,160,616 to Massler et al (hereinafter Massler et al). The rejection is traversed.

Anderson et al, Larsen and Massler et al do not render independent claim 12 unpatentable. Claim 12 is to a substrate support comprising, *inter alia*, a contact surface comprising a plurality of mesas, the mesas comprising a coating of a diamond-like carbon material over a titanium-containing adhesion layer. Anderson et al does not teach or suggest these claimed features. Instead, Anderson et al teaches a substrate support comprising a plurality of mesas (islands 19) that are coated with silicon nitride to improve wear resistance. Thus, Anderson et al does not teach a diamond-like carbon

material. Larsen and Massler et al do not make up for the deficiencies of Anderson et al, as will be described.

The Examiner's proposed combination of references is improper under 35 §103(a) and does not render claim 1 unpatentable. Larsen is relied upon by the Examiner to teach the use of a diamond-like carbon coating (element 220). However, Larsen fails to teach a diamond-like carbon material over a titanium-containing adhesion layer, as recited in Applicant's claim 1. To make up for this deficiency, the Examiner relies on Massler et al's teaching of a multi-layer diamond-like system. However, the Examiner fails to provide compelling reasoning as to why one of ordinary skill in the art would have been motivated to (1) replace the silicon nitride coating of Anderson et al with a diamond-like coating taught by Larsen and (2) then replace the Larsen coating with a multilayer coating of Massler et al. It fails the test of logic to contend that one of ordinary skill in the art would have found it obvious to replace Anderson's coating with a coating (Larsen's) that then must be replaced by another coating. Accordingly, this two-step modification proposed by the Examiner does not constitute a proper rejection under 35 U.S.C. §103(a).

In actuality, it would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention to replace Anderson et al's coating with the coatings taught by Larsen and Massler et al. First, the Examiner has provided no reason as to why one of ordinary skill in the art would have been motivated to replace Anderson et al's silicon nitride coating in the first place. According to Anderson et al, the resulting support "is tough and wear resistant, and particulates less than 2-3 micrometers are unlikely to abrade the chuck or lower the clamping force" (column 3 lines 24-27). Thus, one of ordinary skill in the art, after considering the teaching of Anderson et al as a whole, would not have been motivated to modify Anderson et al by removing the coating described by the reference as being fully functional.

Furthermore, one of ordinary skill in the art would have been taught away from making the Examiner's proposed modification. For example, Anderson et al teaches the

desirability of fabrication by simple and inexpensive processing techniques (see column 3 lines 20-22). In contrast, Massler et al describes a complex and elaborate multi-step fabrication process for applying the taught multilayer coating system (see column 8 line 27 through column 13 line 54). Accordingly, one of ordinary skill in the art after considering the teachings of Anderson et al would be steered away from a more complex coating process, particularly in view of the described adequacy of coating taught by Anderson et al.

In addition, one of ordinary skill in the art would not have found it obvious to replace the coating of Massler et al for the coating of Anderson et al for other reasons. For example, Anderson et al's coating is described as being a thin layer from 3000-6000 Angstroms. The multilayer coating of Massler et al is significantly thicker (see column 5 lines 16-21). Note that even the lower range of the desired coating thickness in Massler et al is twice the thickness of Anderson et al's coating. Further, most of the coating thicknesses in Massler et al are thicker than the height of the mesas taught by Anderson et al. Thus, by applying the coating of Massler et al to the mesas of Anderson et al, the mesas would effectively be leveled out. Also, Anderson et al describes the use of silicon nitride coating to prevent shorting (see column 5 lines 2-5). Thus, one of ordinary skill in the art would not have found it obvious to replace the silicon nitride coating with the Massler et al coating that includes metals and other materials that might make it less effective than the silicon nitride in preventing shorting.

For at least these reasons, claim 12 is not properly rejectable under 35 USC §103(a) as being unpatentable over Anderson et al, Larsen and Massler et al. The modification proposed by the Examiner is not one that would have been well within the grasp of one of ordinary skill in the art at the time the invention was made. In this regard, the Examiner has failed to establish that the teachings of Larsen and Massler et al could be applied, with a reasonable likelihood of success, to Anderson et al. There is no evidence to suggest that this is a situation where the ordinary artisan could have combined in the teachings in a manner that would result in the invention of claim 12 and there is no evidence to suggest the artisan would have seen the benefit in doing so.

Furthermore, Applicant has unexpectedly found that the invention set forth in claim 12 reduces contamination of the backside of a substrate and increases substrate yields. Thus, claim 12 is allowable over the references cited.

Applicant requests withdrawal of the rejection of claim 12 under 35 U.S.C. §103(a). In addition, Applicant requests withdrawal of the rejection of claims 14, 15 and 19 which depend from claim 12 and are not rendered unpatentable by Anderson et al, Larsen and Massler et al for at least the same reasons as claim 12.

Anderson et al, Larsen and Massler et al also do not render independent claim 58 unpatentable. Claim 58 is to a substrate support comprising, inter alia, a contact surface comprising a plurality of mesas, the mesas comprising a coating comprising a diamond-like carbon material, and a metal-containing adhesion layer. Anderson et al does not disclose a diamond-like carbon material and a metal adhesion layer. One of ordinary skill in the art would not have found it obvious to modify Anderson et al in view of the teachings of Larsen and Massler et al in a manner that would arrive at the invention of claim 58, as discussed above. Accordingly, Applicant requests withdrawal of the rejection of claim 58 under 35 U.S.C. §103(a).

The Examiner rejected claims 5, 6, 16, 18, 20 and 61-63 under 35 USC §103(a) as being unpatentable over Anderson et al in view of Massler et al and further in view of U.S. Patent 5,352,493 to Dorfman et al (hereinafter Dorfman et al). The rejection is traversed.


Claims 5, 6, 16, 18, 20 and 61-63 depend from one of independent claims 12 and 58. Anderson et al and Massler et al do not render claims 12 and 58 unpatentable for the reasons discussed above. Dorfman et al is not relied upon to make up for the deficiencies of Anderson et al and Massler et al, nor does it. Thus, independent claims 12 and 58 are allowable over the combination of Anderson et al, Massler et al, and Dorfman et al and the claims depending therefrom are also allowable over the

combination of references for at least the same reasons as the claim from which they depend.

Should the Examiner have any questions regarding the above remarks, the Examiner is requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,  
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